



MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS 2018/2019

ACADEMIC YEAR

THIRD YEAR FIRST SEMESTER

SCHOOL OF TOURISM AND NATURAL RESOURCE

MANAGEMENT

BACHELOR OF SCIENCE IN FOREST ECOSYSTEM

MANAGEMENT

COURSE CODE: FEM 3117

COURSE TITLE: FOREST ENTOMOLOGY

DATE: 11TH DECEMBER 2018

TIME: 08:30 - 10:30 AM

INSTRUCTIONS TO CANDIDATES

Answer **ALL** questions in section **A** and any other **THREE** in section **B**.

This paper consists of 2 printed pages. Please turn over

SECTION A. (25 marks): Answer ALL questions

1. Analyze the goals of studying forest entomology **(5 mark)**
2. You have been appointed to work for Kenya Forest Service as a Forest Ecosystem Conservator whose main duty is conservation and management. Evaluate your roles in line with forest entomology? **(5 marks)**
3. a) What is insect population outbreaks? **(1 mark)**
b) Distinguish between “spreading out” and “scattered” types of insect population outbreaks **(4 marks)**
4. a) Explain life tables distinguishing between age-specific and time specific life tables **(3 mark)**
b) Explain four indicators of the presence of insects and/or insect activities on plants or in forest ecosystem? **(2 marks)**
5. Explain four parameters of forest insects that are largely influenced by biotic and abiotic attributes of a forest habitat **(4 marks)**

SECTION B (45 marks): Answer ANY THREE questions

6. a) Analyze how phytophagous insects may influence the structure of forest communities **(4 marks)**
b) Evaluate the influence of wind movement patterns on the ecology of forest insects **(7 marks)**
c) Evaluate how structural complexity of trees provide great variety of niches that insect can occupy **(4 marks)**
7. Discuss the biological and mathematical terms the exponential and logistic insect population growth forms/models **(15 marks)**
8. a) Explain what you understand by the term “Integrated Pest Management” and highlight some of its features **(6 marks)**
b) Discuss biological control as a means of forest insect pest management with particular reference to Kenya forestry **(9 marks)**
9. Discuss the biology, ecology and control of **any one** of the following forest insects **(15 Marks)**
 - i. *Cinara cupressivora* Buxton (Homoptera: Aphididae).
 - ii. *Oemida gahani* (Dist) (Coleoptera: Cerambycidae).

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